

REMARKS

The foregoing amendment and the following arguments are provided to impart precision to the claims, by more particularly pointing out the invention, rather than to avoid prior art.

Claims 1-36 are pending. Claims 1, 4-5, 7, 22, 24, 26-27, 32 and 35 have been amended. Claim 34 has been cancelled. No claims have been added. Applicants submit that the amendments do not add new matter.

35 U.S.C. § 102 Rejections

Examiner rejected claims 1, 3-5, 22-23 and 27-31 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,933,421 by Alamouti (hereinafter "Alamouti").

~~Applicants respectfully disagree. Claim 1 as amended sets forth the following~~

A cellular network comprising:
a plurality of subscribers communicating with the base station using orthogonal frequency division multiple access (OFDMA);
at least one base station having logic to coordinate multiple-access and information exchange between the at least one base station and the plurality of subscribers, the logic selecting a set of OFDMA traffic channels from a plurality of candidate OFDMA traffic channels based on feedback channel information collected from the plurality of subscribers and channel information collected from at least one other base station. (emphasis added)

As set forth above, Claim 1 sets forth a base station having logic that selects OFDMA traffic channels for use by subscribers based on feedback channel information collected from the subscribers and channel information collected from at least one other base station. Thus, Claim 1 sets forth assigning channels based on information of multiple base stations. Alamouti does not disclose channel assignment among multiple base stations. Alamouti only teaches OFDMA channel selection. In fact, column 24, lines 23-47 sets forth that the base uses the channel measurements sent by the RU to compute the

CAF, which in turn is used to select the channel for the RU. There is not discussion in Alamouti of a base station having logic to assign OFDMA traffic channels based on feedback channel information collected from multiple subscribers and at least one other base station. In view of this, Applicants respectfully submit the present invention as claimed is not anticipated by Alamouti.

Claim 4 sets forth that the plurality of subscribers sent feedback information in response to a sounding signal from each of one or more base stations. Thus, each such subscriber is capable of being responsive to sounding signals from multiple base stations.

Alamouti does not disclose a subscriber capable of being responsive to multiple sounding signals from multiple base stations. In view of this, Applicants respectfully submit that

Claim 4 is not anticipated by Alamouti.

~~Claim 22 as amended sets forth the following:~~

A method comprising:
receiving channel characteristics and noise-plus-interference information measured at spatially distributed subscribers;
receiving channel characteristics information for at least one bus station; and
assigning traffic channels for an orthogonal frequency-division multiple-access (OFDMA) network based on received channel characteristics and noise-plus-interference information measured at the spatially distributed subscribers and the channel characteristics information from the at least one base station.
(emphases added)

As set forth above, Claim 22 sets forth the assigning traffic channels for an OFDMA network based on received channel characteristics and noise-plus-interference information measured at spatially distributed subscribers and channel characteristic information from at least one base station. Thus, similar to Claim 1, Claim 22 as amended sets forth the channel assignment being performed with information received from a base station. Applicants respectfully submit that such a channel assignment is not

set forth in Alamouti. Therefore, Applicants respectfully submit that Claim 22 as amended is not anticipated by Alamouti.

Claim 27 sets forth the following:

An apparatus comprising:
a channel and noise-plus-interference estimator;
an access signal generator coupled to the estimator;
an OFDMA modem coupled to the generator; and
a radio frequency transmitter to transmit information on
OFDMA traffic channels allocated through a collaborative channel
assignment among multiple base stations. (emphasis added)

As set forth above, Claim 27 sets forth an apparatus having a radio frequency transmitter to transmit information on OFDMA traffic channels allocated through a collaborative channel assignment among multiple base stations. As set forth above, Alamouti does not disclose collaborative channel assignment among multiple base stations. In view of this, Applicants respectfully submit that Claim 27 is not anticipated by Alamouti.

35 U.S.C. § 103 Rejections

Examiner rejected claims 2, 7-21 and 32-36 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,933,421 by Alamouti in view of U.S. Patent No. 5,956,642 by Larsson (hereinafter "Larsson"). Applicants respectfully disagree.

Claim 7 sets forth the following

A method comprising:
sending sounding signals to a plurality of subscribers;
receiving channel condition information for a plurality of OFDMA traffic channels; and
performing OFDMA multi-user traffic channel assignment to
assign traffic channels from the plurality of OFDMA traffic channels to
the plurality of subscribers based on the channel condition information and
estimated spatial gains for uplink and downlink signals for the plurality of
subscribers. (emphasis added)

As set forth above, Claim 7 sets forth performing OFDMA multi-user traffic channel assignment based on channel condition information estimated spatial gains for uplink and downlink signals for a plurality of subscribers. Thus, Claim 7 sets forth the joint channel

assignment for multiple subscribers based on channel information for all the users.

Alamouti, in contrast, discloses channel assignment being performed for an individual subscriber based on individual channel characteristics. There is no discussion in Alamouti of performing channel assignments for an individual subscriber based on channel characteristics of other subscribers.

Larsson does not overcome the deficiency of Alamouti. That is, Larsson does not disclose joint channel assignment for multiple subscribers based on channel information for multiple users. In view of this, Applicants respectfully submit that the combination of Alamouti and Larsson does not disclose all of the limitations that set forth in claim 7, and thus, Applicants respectfully submit that Claim 7 is not obvious in view of the combination of Alamouti and Larsson.

Furthermore, with respect to Claims 8, the present invention as claimed set forth estimating channel gains and channel interference for OFDMA traffic channels. As indicated by the Examiner, Alamouti does not teach estimating both spatial channel gains and interference for OFDMA channel assignment. Larsson is also silent with respect to estimating channel gains and channel interference for OFDMA traffic channel assignment. In view of this, Applicants respectfully submit the present invention as claimed in Claim 8 would not have been obvious in view of a combination of Alamouti and Larsson.

With respect to Claims 17-19, the present invention sets forth multiple base stations coordinating to perform traffic channel assignment. As set forth above, this is clearly not shown in Alamouti. Larsson does not overcome this deficiency. Therefore, the combination of Alamouti and Larsson does not disclose the multiple base stations coordinate to perform OFDMA traffic channel assignment. In view of this, Applicants respectfully submit that the present invention as claimed in Claims 17-19 would not be obvious in view of Alamouti and Larsson.

Examiner rejected claims 6 and 24-26 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,933,421 by Alamouti in view of U.S. Patent No. 6,600,776 by Alamouti (hereinafter "Alamouti '776"). Applicants respectfully disagree with the Examiner.

Claim 6 sets forth using a MAC logic to select OFDMA traffic channels based on feedback channel information collected from multiple subscribers and channel information collected from at least one other base station. As set forth above, Alamouti does not disclose selecting OFDMA traffic channels based on feedback channel information collected from multiple subscribers and at least one other base station.

Alamouti '776 does not overcome this deficiency. Therefore, Applicants respectfully submit the present invention as claimed is not obvious in view of the combination of two

Alamouti references:

With respect to Claim 24-26, Claim 24 sets forth the following:

A method comprising:
each of a plurality of subscribers estimating channel gains and noise-plus-interference levels of a set of OFDMA traffic channels in response to a sounding signal;
the plurality of subscribers transmitting to a first base station measured channel and noise-plus-interference information;
receiving an allocation of one or more OFDMA traffic channels allocated in response to the measured channel and noise-plus-interference information and channel information from a plurality of base stations including a second base station other than the first base station;
at least one of the plurality of subscribers transmitting packets using the one or more allocated OFDMA traffic channels. (emphasis added)

As set forth above, Claim 24 includes receiving an allocation on one or more OFDMA traffic channels allocated in response to the measured channel and noise-plus-interference information and channel information from multiple base stations. Applicants respectfully submit as set forth above, such a feature is not shown in either of the Alamouti references. In view of this, Applicants respectfully submit the present invention as claimed would not be obvious in view of the two Alamouti references.

Accordingly, Applicants respectfully submit that the rejections under 35 U.S.C. §102 and §103 have been overcome by the amendments and the remarks and withdrawal of these rejections is respectfully requested. Applicants submit that Claims 1-33 and 35-36 as amended are now in condition for allowance and such action is earnestly solicited.

If there are any additional charges, please charge Deposit Account No. 02-2666 for any fee deficiency that may be due.

Respectfully submitted,

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Dated: 9/2, 2004

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